INSTALLATION

The **TEMP-DM** (*Duct Mount*) model transmitter should be installed with a flange. This flange is first screwed onto the duct wall and the transmitter probe is then inserted into the flange central hole and locked. Figure 05 below shows flange dimensions and holes. Available in stainless steel or polyamide 6.6.
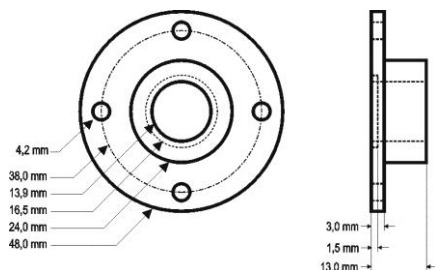

Figure 04 – Mounting flange for **TEMP-DM**.

The probe is made in stainless steel, with standard lengths of 150 mm and 250 mm.
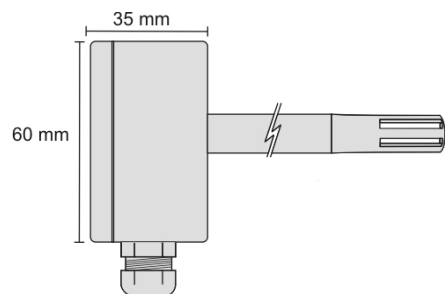

Figure 05 - Model **TEMP-DM** dimensions.

The model **TEMP-WM** (*Wall Mount*) was designed to be mounted directly onto a wall. With the cover off, the user can access the 2 fixing points and the signal connector, as shown in Figure 07. **The transmitter sensor capsule must be placed faced down in order to assure the specified accuracy and protection level.**
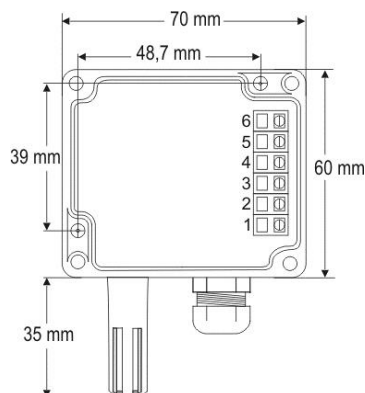

Figure 07 - **TEMP-WM** fixing holes and housing dimensions.

ELECTRICAL CONNECTIONS

The transmitter can be ordered as **4-20 mA** current output or **0-10 Vdc** voltage output. The output signal is defined on purchase and cannot be later changed.

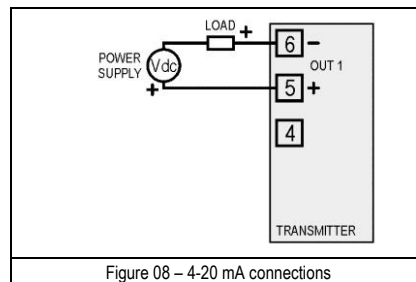Figures 08 and 09 show the required electrical connections.
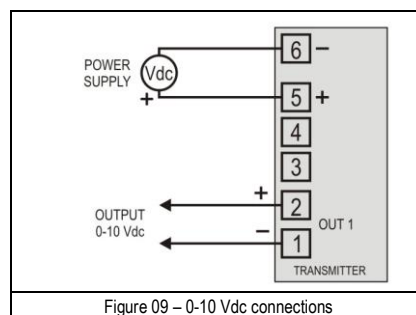

Figure 08 – 4-20 mA connections

Figure 09 – 0-10 Vdc connections

LOAD represents the output signal measurement equipment (controller, register, etc).

The connection wires go inside the transmitter through to the cable gland mounted in the transmitter case.

INSTALLATION RECOMMENDATIONS

- Conductors of small electrical signals must be distant from activation or high-tension/current conductors, preferably passing through grounded conduits.
- A specific electrical power supply network should be provided for instruments use only.
- In controlling and monitoring applications, possible consequences of any system failure must be considered in advance.
- RC filters (47 R and 100 nF, serial) in inductor charges (contactors, solenoids, etc.) are recommended.

T E M P - W M   A N D   T E M P - D M

O P E R A T I N G   M A N U A L
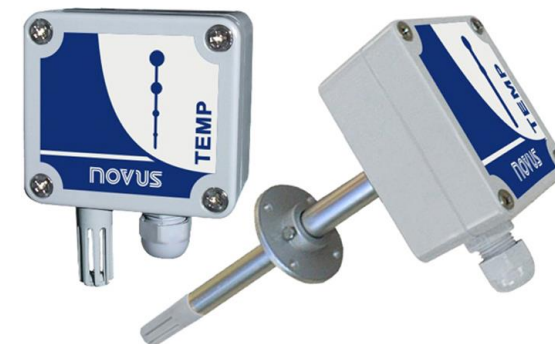
WARRANTY

The manufacturer will grant to the owner of his equipment, duly identified through the purchase invoice, a twelve-month warranty under the following terms:

1. The one year warranty begins on the day of shipment as stated on the sales bill.
2. During the warranty period all costs of material and labor will be free of charge provided that the instrument does not show any evidence of misuse.
3. For maintenance, return the instrument with a copy of the sales bill to our factory. All transportation and insurance costs should be covered by the owner of the equipment.
4. Should any sign of electrical or mechanical shock, abuse, bad handling or misuse be evident the warranty voids and maintenance costs will be charged.

SPECIFICATIONS

Accuracy: 0.5 °C @ 25 ºC (1.6 ºC for the entire measurement range);

Range: Configurable betwen -50 and 120 °C, (see **Operating limits**); Default: 0 to 100 °C

Operating limits:
　　　　TEMP-WM: Electronic circuit: -20 to +65 °C
　　　　TEMP-DM: Electronic circuit: -20 to +65 °C
　　　　　　　　　　Sensor and probe: -40 to +100 °C

Note: For temperatures above 65 °C or below –20 ºC, a maximum of 50 % of the probe length (TEMP-DM) should be exposed to this temperature, to avoid conducting extreme temperatures to the electronic module.

Response time: up to 30 seconds in slow moving air.

Power supply: 4-20 mA model: 　12 Vdc to 30 Vdc
　　　　　　　　　0-10 V model: 　18 to 30 Vdc / 15 mA max.

Outputs: 4-20 mA or 20-4 mA current, 2-wire *loop* power supply
　　　　　　0-10 Vdc voltage / 2 mA max.

Output Load (RL): 4-20 mA model: RL (Ohms max.) = (Vdc – 12) / 0.02
　　　　　　　　　　　　　　　　　　let Vdc = Loop power supply (12 to 30 Vdc)
　　　　　　　　　　　0-10 Vdc model: 2 mA max.

Output Resolution: 4-20 mA: 0.006 mA
　　　　　　　　　　　0-10 Vdc: 0.003 V

Reverse resolution: YES

Protection Electronic circuit case: IP65; Sensors capsule: IP40

Cable entrance: Compress fitting PG7;

Sensor, output and power supply are not electrically isolated.

IMPORTANT NOTE:

An identification label, on the transmitter body, shows the characteristics of this model.

No accuracy improvement results from narrowing the range for the 4-20 mA output. For example, the specified accuracy will be achieved for a transmitter configured to a -50 to 100 °C or to a 20 to 40 °C range.

Shall any error occur in the measures taken by the sensor, they can be corrected with the TxConfig software. The TxConfig interface can be connected to the transmitter even connected to the process and under operation. See Figure 03 and **Zero Correction** field in the main screen of the TxConfig software.

It is possible that some temporary oscillations occur on the transmitter output when it is powered on and some changes are applied on its configuration.

CONFIGURATION

If the default configuration or the ordered configuration satisfies the application, then no further configuration is necessary and the transmitter is ready to be used. If a new setting is desired, this can be accomplished by the **TxConfig** and sent to the transmitter through the **TxConfig Interface**.

The TxConfig Interface and Software compose the **Transmitter Configuration Kit**, which can be purchased separately. The latest release of this software can be downloaded from our web site. To install, run the ***Tx_setup.exe*** and follow the instructions.

The TxConfig interface connects the transmitter to the PC, as shown in Figures 01 and 02. There are two types of interface: TxConfig-RS232 and TxConfig-USB.
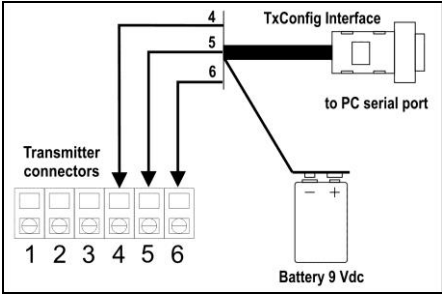

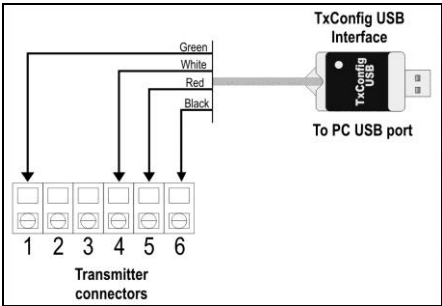Figure 01 – TxConfig Interface connections model RS232

Figure 02 – TxConfig Interface USB connections

Once the connection is accomplished, the software shows the configuration options of the transmitter model attached. Access the *Help* for usage instructions.
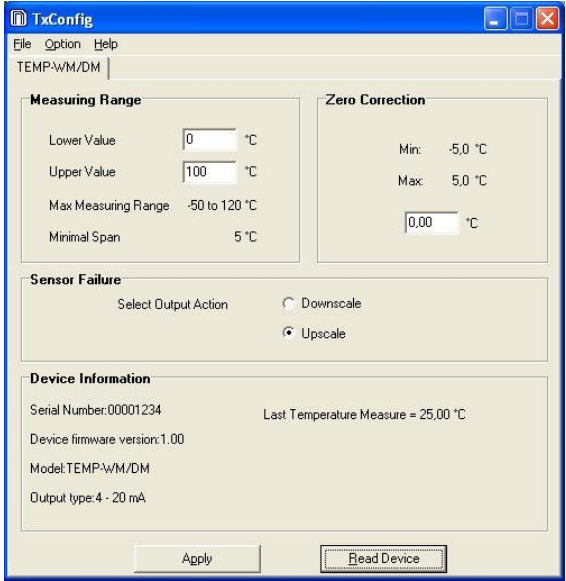
The **TxConfig** screen in shown in Figure 03.

Figure 03 – Main window of TxConfig software

The fields in the screen mean:

1. **Measuring Range**: Defines the output scale for the input sensor. Program here the measurement **Lower Value** and the **Upper Value.**

   When the lower limit is defined with a value higher than the High Limit the output current operates from 20 to 4 mA.

   The values configured in these fields can not be beyond the sensor measuring range. The minimal span value has to be observed as well.

2. **Sensor Failure**: Establishes the transmitter output behavior (upscale or down-scale) in the presence of a sensor fail. When Minimum is selected, the output current is < 4 mA (down-scale), typically used for refrigeration. When Maximum is selected, the output current is > mA (up-scale), typically used in heating systems.

3. **Zero Correction**: Allows for small sensor corrections.

4. **Apply**: Transmitter identification data. These information must be informed when the user contact us.

5. **Read Device**: Brings to the screen the current transmitter parameters configuration.

6. **Send Configuration**: Sends a new configuration to the transmitter.

Note: The factory default configuration is (unless otherwise specified or ordered):

• Temperature span 0 to 100 °C / 0 °C of zero correction / Upscale when sensor fails.

During configuration, the transmitter needs to be electrically powered. TxConfig USB interface can provide the power to the transmitter, but this also depends on the used computer hardware.

The TxConfig-RS232 interface, however, requires an auxiliary supply for guarantee reliable communication with the computer. An external 9V battery can be used for this purpose (Figure 01). An alternative is to configure the transmitter while it is in operation; this way, the needed energy is supplied by the current loop. See Figure 04.
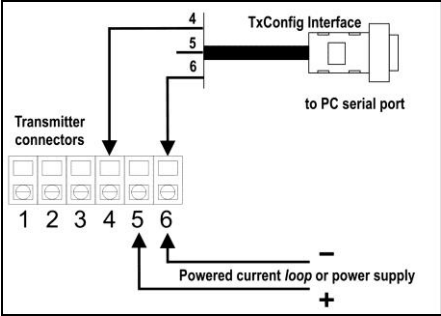

Figure 04 – TxConfig Interface connections - Powered current *loop* or power supply

> ⚠️ **The TxConfig interfaces contain dedicated circuitry for proper communication between transmitters and computer. Always make use of the TxConfig interfaces for configuration purposes, otherwise the transmitters may get damaged, voiding the warranty.**

Serial port configuration errors may occur when other software are sharing the same serial port. Close all serial port applications prior to using the TxConfig software.